

CLAIMS

1. A punching tool, having a guided, axially displaceable die plunger, which is fixed against relative rotation, in a guide bushing and having a bore in the front end in which a punching die can be axially fixed, the bore provided with an annular groove, holding elements which releasably engage the annular groove, wherein during the punching stroke the punching die rests against a front face of the die plunger and can be axially fixed in place by holding elements in the form of snap-in balls, each of which is seated in a transverse bore in the front end of the die plunger and which are maintained in engagement with the annular groove by means of a spring washer, the outer diameter of which spring washer is less in the engagement position than the inner diameter of the guide bushing and which spring washer can be widened to a diameter greater than the inner diameter of the guide bushing when the die plunger is removed from the guide bushing.

2. A punching tool in accordance with claim 1, wherein in the engagement position the outer diameter of the spring washer is only slightly less than the inner diameter of the guide bushing.

3. A punching tool in accordance with claim 1, wherein the spring washer is made of steel.

4. A punching tool in accordance with claim 1, wherein the spring washer is seated in an annular groove in the circumferential face of the die plunger, which annular groove crosses the central longitudinal axes of the transverse bores and is only slightly less wide than the width of the spring washers.

5. A punching tool in accordance with claim 1, wherein the shaft of the punching die is formed with a collar, the rear of which rests against the front end face of the die plunger.

6. A punching tool in accordance with claim 5, wherein the distance between the transverse plane in which the central longitudinal axes of the transverse bores are located and the front end face of the die plunger is of such a size in relation to the distance between the central transverse plane through the annular groove and the back of the collar that the punching die can be pressed axially against the die plunger by means of the spring-loaded snap-in balls.

7. A punching tool in accordance with claim 1, wherein the rear end face of the shaft of the punching die rests against the bottom of the bore in the front end of the die plunger.

8. A punching tool in accordance with claim 7, wherein the distance between the transverse plane in which the central longitudinal axes of the transverse bores are located and the bottom of the bore is of such a size in relation to the distance between the central transverse plane through the annular groove and the rear end face of the shaft of the punching die that the punching die can be pressed axially against the die plunger by means of the spring-loaded snap-in balls.

9. A punching tool in accordance with claim 1, wherein the shaft of the punching die is provided behind the annular groove with a longitudinal groove open at the rear end of the shaft, into which a transverse pin, whose diameter matches the width of the longitudinal groove and which is seated in the die plunger, can be inserted into the bore in the die plunger.

10. A punching tool in accordance with claim 9, wherein the transverse pin projects radially outward out of the die plunger into the longitudinal groove and the end of the pin is located at the exterior of the guide bushing.